SCIENCE & EDUCATION Impact

Benefits From the USDA/Land-Grant Partnership

# Tipping the Odds

## As risk grows, new tools and techniques help.

***Markets, the weather, insects, weeds, environmental concerns, financial decisions, and even bacteria conspire to make agriculture a risky business. Now, agriculture faces a gradual phaseout of government "safety net" support programs. Freedom to Farm legislation is hailed by many as good news for farmers who want to diversify and farm in their own fashion, but it also means that the stakes are getting higher and that managing risk is getting more complex. Daunting as these risks may be, they're being managed more effectively as a result of the research and education programs of the U.S. Department of Agriculture (USDA) and Land-Grant universities.***

### Payoff

- **Drought resistance.** A gene in corn and sorghum that helps produce a drought-resistance-enhancing molecule was identified by **Purdue** researchers. If the molecule is combined with disease resistance and stalk-lodging resistance, it can improve drought resistance. A significant drought occurs every four to five years in the Corn Belt. A 1 percent increase in drought resistance could save $4 million for **Indiana** farmers alone.
- **Eliminating an udder risk.** Labor markets in **Idaho** are forcing dairy farmers to rely on Spanish-speaking workers for many routine dairy tasks. But the language barrier keeps producers from educating workers on milking procedures—putting milk quality and cow health at risk. Bilingual Idaho Extension programs help improve worker training, which translates into improved milk quality and fewer milking-related problems such as mastitis.
- **Cutting cotton risk.** Researchers at **Texas A&M** developed a series of 16 on-farm weather stations in the Coastal Bend region. The data from these weather stations are used in computer programs that help growers avoid risks at planting time and predict risks from insects and disease. Growers and consultants report cost savings averaging $35 to $50 per acre, with potential cost savings for the Coastal Bend region of about $10 million annually.

***RESEARCH, EDUCATION, AND EXTENSION AT WORK***

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- **Milking the markets.** A dairy price-support system that had kept prices stable since the 1950s has been reduced. During 1996, price swings meant a change of almost $3,000 in the monthly milk check of a typical **Wisconsin** dairy farm with 55 cows, resulting in planning and cash flow problems. Wisconsin Extension programs teach farmers and milk plant and cooperative managers to use forward pricing contracts and futures markets to reduce price risk. One dairy cooperative estimates that the number of forward pricing contracts has quadrupled in the last year, at least partially as a result of extension programs. Two other cooperatives now offer forward pricing contracts, and the number of producers and cooperatives trading futures prices is also growing.
- **Market savvy.** The phaseout of farm subsidies means that rice producers need to become more savvy marketers to maintain profits. **Texas A&M** researchers showed that using futures markets to manage risk could increase annual income by $26,000 on a 400-acre farm.
- **Taking the bite out.** The emergence of insects resistant to traditional control methods slashed cotton production for growers in Northern **Alabama,** putting farmers at economic risk. In one county, all farmers participated in **Auburn** Extension programs on *Bt* cotton, a genetically engineered form of the plant that includes a natural pest inhibitor. Plantings of *Bt* cotton went from zero to 80 percent of Colbert County's cotton acreage. Yields grew to an average of 800 pounds per acre, up from 300 pounds the year before.
- **A model program.** Computer models are helping farmers make smart financial decisions. Researchers in **Illinois** developed a computer model to evaluate the impacts of tax reform proposals and cash rental arrangements compared with other rental agreements. The model indicated that property tax reform to help fund education in Illinois would have a positive financial impact on most Illinois farms. The model also showed that flexible cash rental arrangements, sought by farmers to minimize risk, would have minimal financial impact and would increase friction between landlords and tenants. An **Ohio State** computer program allows individual farmers to analyze various risk management strategies by exploring both price and yield risk.
- **Passing on gas savings.** Extension specialists helped **Tennessee** poultry farmers form a propane gas cooperative to buy propane gas in larger volumes, minimizing the risk posed by localized price hikes. Volume buying saved 15 cents a gallon, resulting in a savings of $120,000 for the 46 co-op members.
- **Masters at marketing.** A Master Marketers Program at **Texas A&M** helps participating producers realize an extra $10,000 to $25,000 in annual returns by improving their marketing skills. Participants are encouraged to share what they have learned with others through marketing clubs.
- **Avoiding floodplain pain.** More than a half a million homes and buildings are located in 100-year floodplains in **Louisiana.** Extension specialists are coordinating programs that teach homeowners, floodplain and emergency managers, and contractors new techniques for elevating brick veneer buildings. One housemover is using the technology to elevate homes at prices far lower than out-of-state contractors offer. Additional programs focus on damage reduction, flood proofing, flood insurance, and other issues.
- **Reading the regulations.** Some of the most frustrating problems faced by agricultural producers involve environmental and regulatory concerns. **Florida** Extension specialists developed programs in both English and Spanish to help producers comply with changing environmental laws and regulations. This information is also used by many government officials, ranging from county extension staff to federal regulators. The effort has resulted in closer relationships between regulatory agencies, producers, and the environmental community.

USDA **United States Department of Agriculture**
Cooperative State Research, Education, and Extension Service

USDA/Cooperative State Research, Education, and Extension Service in cooperation with the Extension Committee on Organization and Policy and the Experiment Station Committee on Organization and Policy.



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